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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/711,843

10/08/2004

Kevin Lin

320528651US1

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05/28/2008

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EXAMINER

ELAND, SHAWN

ART UNIT

PAPER NUMBER

2188

MAIL DATE

DELIVERY MODE

05/28/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/711,843	Applicant(s) LIN, KEVIN	
	Examiner SHAWN ELAND	Art Unit 2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-9,11-15 and 18-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-9,11-15 and 18-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02/21/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office action is in response to the Applicant's response filed on 02/21/08.

Status of Claims

Claims 1 – 4, 6 – 9, 11 – 15, & 18 – 24 are pending in the Application.

Claims 1, 4, 6, 9, 11 – 12, 15, & 18 – 20 have been amended.

Claims 5, 10, & 16 – 17 are cancelled.

Claims 21 – 24 are new.

Claims 1 – 4, 6 – 9, 11-15, & 18 – 24 are rejected.

Response to Arguments

Applicant's arguments filed 02/28/08 have been fully considered but they are not persuasive.

The logical for physical mapping, as shown by Michigami in figure 5, writes from logical to physical memory in the same manner as Applicant's claims when the number of banks is two. Therefore the mapping is the same in both Michigami and the claimed invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 4, 6 – 9, 11 – 15, & 18 – 24 are rejected under 35 U.S.C. 102(b) as being anticipated by *Michigami* (US 6,223,322).

In regard to claim 1, Michigami teaches generating a block index for a block of data the block index having a block index value (*figure 5 “LOGICAL MAPPING”; Table 1*); mapping the block index to a physical address of a memory based on the block index value and a number N, wherein N is the number of banks of the memory (*figure 5*) wherein the mapping makes each one of the block indexes map in turns to one physical address located at different banks so that any adjacent block of data is stored physically at different banks of the memory (*col. 6, lines 32 – 44*); storing the block of data into the memory at the physical address (*figure 5 “PHYSICAL MAPPING”*).

In regard to claim 20, Michigami teaches generating a plurality of block indexes for a plurality of blocks of data (*figure 5 “LOGICAL MAPPING”*); mapping the block indexes sequentially to a plurality of physical address of a memory based on the block indexes and a number N, wherein N is a number of banks of the memory (*figure 5*) wherein the mapping comprises; dividing the block index value by N to obtain a quotient Q and a remainder R (*col. 6, lines 32 – 44*); and calculating the physical address based on Q and R, wherein the physical address is calculated as the result of $Q * \text{block_size} + R * \text{bank_size}$, wherein bank_size equals the

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memory size divided by N, and block_size equals the size of which the system is in need to process one sector from the optical disc (*figure 5*); and storing the block of data into the memory at the physical address (*figure 5 “PHYSICAL MAPPING”*); wherein the mapping makes each one of the block indexes map in turns to one physical address located at different banks so that any logical adjacent block of data be stored physically at different banks of the memory (*col. 6, lines 32 – 44*).

In regard to claim 6, Michigami teaches retrieving a block of data from a source medium (*Abstract*); assigning a block index for the block of data the block index having a block index value (*figure 5 “LOGICAL MAPPING”; Table 1*); dividing the block index value by N for acquiring a quotient Q and a remainder R, wherein N is number of banks of the memory; identifying a physical address based on Q and R (*col. 6, lines 32 – 44; figure 5*) wherein the calculating step makes the block index interleaved at all times mapping to the physical address located at different unconnected banks and any two logically successive blocks of data be stored physically at different unconnected banks of the memory (*col. 6, lines 32 – 44*); storing the block of data in the memory at the physical address (*figure 5 “PHYSICAL MAPPING”*).

In regard to claim 12, Michigami teaches means for generating a block index for the block of data (*figure 5 “LOGICAL MAPPING”*); means for dividing a value of the block index by N for acquiring a quotient Q and a remainder R, wherein N is a number of banks of the memory (*col. 6, lines 32 – 44*); and means for calculating a physical address of the memory in which to store the retrieved block of data based on Q and R (*figure 5*), wherein the calculating means interleaves the block index at all times by mapping to the physical address to different

unconnected banks so that any two logically successive blocks of data are stored at different unconnected banks of the memory (*col. 6, lines 32 – 44*).

Regarding claims 2, 7, 13, & 18, Michigami teaches wherein the memory supports pipelining access (*col. 4, lines 12 – 15*).

Regarding claims 3, 8, 14, & 19, Michigami teaches wherein the memory is a SDRAM (*fig. 4, element 18*).

Regarding claims 4, 9, & 15, Michigami teaches dividing the block index value by N to obtain a quotient Q and a remainder R (*col. 6, lines 32 – 44*); and calculating the physical address based on Q and R, wherein the physical address is calculated as the result of $Q * \text{block_size} + R * \text{bank_size}$, wherein bank_size equals the memory size divided by N, and block_size equals the size of which the system is in need to process one sector from the optical disc (*figure 5*).

Regarding claim 11, Michigami teaches reading the block of data according to the block index value and the reference function; (*figure 5*) and recording the block of data to a destination medium, whereby the reading includes reading each block of data from different memory banks in turns and to save processing by reducing pre-charge overloads by reading one bank and pre-charging another bank (*col. 6, lines 32 – 44; col. 5, lines 41 – 50*).

Regarding claims 21 - 22 & 24, Michigami teaches causing, while concurrently storing the block of data, a pre-charge for a memory bank other than the memory bank in which the block of data is stored (*col. 5, lines 41 – 50*).

Regarding claim 23, Michigami teaches retrieving a second block of data from the source medium (*Abstract*); assigning a second block index for the second block of data, the second block index having a second block index value (*figure 5 “LOGICAL MAPPING”; Table 1*);

dividing the second block index value by N for acquiring a quotient Q1 and a remainder R2, wherein N is a number of banks of the memory (*col. 6, lines 32 – 44; figure 5*); identifying a second physical address based on Q and R wherein the second block index is interleaved at all times and maps to a physical address located at different banks and any two logically successive blocks of data are stored at different banks of the memory(*col. 6, lines 32 – 44; figure 5*) ; and storing the second block of data in a second memory-bank of the memory at the identified second physical address (*figure 5 “PHYSICAL MAPPING”*) while concurrently causing a pre-charge for a first memory-bank in which the block of data was previously stored (*col. 5, lines 41 – 50*).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Examiner's Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawn Eland whose telephone number is (571) 270-1029. The examiner can normally be reached on MO - TH, & every other FR.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung Sough can be reached on (571) 272-4199. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Shawn Eland/
Examiner, Art Unit 2188
05/24/2008

/Hyung S Sough/
Supervisory Patent Examiner, Art Unit 2188
05/26/08